

# Guide to Flexible Plastic Tubes



# Flexible Tubes: A Growing Market

Flexible plastic tubes remain a popular packaging format for many different products. Indeed, according to Mordor Intelligence, the global tube packaging market has been estimated at [\\$6.66 billion in 2024](#) and is predicted to grow at a CAGR of 7.39% up to 2029, reaching \$9.5 billion.

Plastic tubes offer many benefits to manufacturers and retailers in terms of branding, product protection and a positive user experience. They meet the need for a cost-effective, efficient and – depending on the material and technology used – recyclable packaging solution, often providing a useful alternative to the bulkier bottle and pump format when a smaller and more convenient size is required.

The ever-expanding array of personal care products which are ideal for flexible tubes is one of the reasons for their continuing growth and popularity. These have been further enhanced by [tube packaging's](#) adoption in other key markets including [pharmaceuticals](#) and [foods](#).

While they may be a familiar concept, there are many different types of tube packaging. It is therefore important to choose the one that best meets your specific requirements.

Our handy guide will help you find the most appropriate solution for your product and your brand.

## Benefits of Flexible Tubes

### Wide Range of Applications

Tube packaging is ideal for many different products, including creams, gels, ointments and serums, across a wide variety of end-markets. These range from cosmetics, [health and beauty](#), and pharmaceuticals, to homecare and food.





## Typical End-Markets for Flexible Plastic Tubes

- Personal Care
- Cosmetics and Beauty
- Pharmaceuticals
- Homecare
- Food
- Lubricants



## Typical Products Packed in Flexible Plastic Tubes

- |                     |              |                   |
|---------------------|--------------|-------------------|
| Liquid Soaps        | Sunscreens   | Cleaning Products |
| Creams              | Shampoo      | Sauces            |
| Lotions             | Conditioners | Paint             |
| Gels                | Medications  | Caulk             |
| Skincare Treatments | Ointments    | Glue              |
| Haircare Treatments | Detergents   |                   |





### **Cost-effectiveness**

Plastic tubes can be produced cost-effectively in both smaller and larger volumes to keep market entry costs to a minimum. This provides opportunities for new brands, and for companies to react quickly to market changes and get new products swiftly onto retail shelves.

### **Product Protection**

Maintaining product quality throughout a pack's use is an essential part of the consumer experience and helps to maintain and enhance brand reputation. Flexible plastic tubes provide excellent protection from external contaminants as well as light. This prolongs shelf-life in retail environments and in the home.

### **Convenience**

Flexible plastic tubes offer clean, controlled and easy dispensing for end-users. There are a variety of different closures and heads to suit individual product characteristics. Tube packaging is lightweight and compact and an ideal format for on-the-go uses and travel-size packs, as well as for samplers, testers and free gifts.

### **Design Possibilities**

With a wide choice of sizes, head styles, closures and dispensing systems, there are many types of tube packaging to satisfy individual product requirements, as well as creating family ranges in different sizes.

From a 40ml cosmetic tube sampler to a 300ml dispensing tube, with snap-on flip top or screw caps, and incorporating applicators such as a sponge or brush, tubes can be tailored to precise customer requirements. Full bespoke designs can also be created.



### Effective Branding

Tube packaging can be personalised in several ways to meet branding requirements and establish an eye-catching appearance on-shelf. As well as flexo or silk screen printed tubes, labelling is also available, all of which provide the opportunity for 360° degree branding. A QR code can enable further interaction with consumers. There is also room for essential ingredients and user instructions information.

Lacquers create a gloss or matt finish to further enhance the look of the tube while tactile effects can also help to enrich brand perception and the consumer experience.

### Sustainability Advantages

Generally, flexible tubes are packed vertically which optimises the number of tubes per tray, reducing wasted space in top of the box. This packing style, being standard for tubes, means larger numbers than others which are offered for bottles or jars, helping to minimise the carbon impact of transportation. Plastic tubes can also be manufactured using recycled plastic or biopolymers. Mono material [PE tubes](#) can be more easily recycled than when using mixed materials\*.

## How Tubes are Manufactured

There are different ways to manufacture tubes, among them being extruded or laminate processes. In an extruded tube, the tube is first extruded through a pin and die that determines its diameter. It is then tempered in a water bath to stabilize the plastic and allow immediate decoration.

In a laminate process, flat sheet is first extruded and then decorated via flexo printing, cold foil, emboss, etc. directly onto the sheet. This is known as decorating in the flat. Once decorated, the sheet is then formed into a round tube body.

Heading is performed by compression moulding a round “doughnut” of plastic onto a mandrel. The mandrel forms the inside, and a mould is pressed down on the outside to form the external features. Pressure from the outer mould forced onto the mandrel welds the plastics together. A camera system checks the tube’s orifice and, if required, a tamper evident foil seal can be applied at this stage.

At the final station a closure is applied before packing and despatch to the customer for filling.



\*Check locally; tube recycling may not be accepted in all locations.

# Choosing the Most Appropriate Flexible Tube

Dispensing Tube? A convenient solution for packing sauces, creams, lotions? A cosmetic tube? A printed tube to create brand differentiation on-shelf?

There are numerous requirements behind the development of every flexible plastic tube. Here are some of the main considerations in selecting the best solution for your particular application.



## Choice of Material

Flexible plastic tubes are usually made from a mix of Linear Low Density (LLDPE), Low Density (LDPE), and High Density (HDPE) polyethylene. These different materials have individual characteristics that make them suitable for different types of applications. The choice of polymer mix is determined by the chemical composition of the product being packed.

The closure can also influence material choice. For example, a tube that includes a keyhole at the end from which to hang it in a shop display requires a specialist mix.

## Characteristics of Product

Another key consideration when specifying your plastic tube is the characteristics of the product it contains. Product viscosity and volume are critical here. Creamier products such as an ointment would need more flexibility than a liquid soap, hair cream or hand sanitiser. Tubes made to hold DIY fillers need to be soft, so that larger quantities can be squeezed out.

Other criteria to take into account include whether a product contains sensitive ingredients, has a strong perfume or could be affected by sunlight or other external elements.

## Decoration

Your choice of decoration could also determine the best material. For example, the amount of post-consumer recycled (PCR) plastic that can be included may vary depending on the precise printing process used, such as detailed (flexo) print for photo realistic images.



# Which Material is Most Suitable for your Flexible Tube Requirements?

Every flexible tube has to be a mix of materials to match market demographics and product content. The different materials offer a range of benefits, such as tube rigidity and stiffness, flexibility and squeeziness, toughness and crack resistance or a sealing window.

## Selection of Neck Finish and Closure

The screw cap, which incorporates threads that are matched to similar ones on the neck of the tube, is one of the most common closures. It includes the option of an additional seal, for tamper evidence. When fully closed the incorporated sealing ring prevents leakage and stops the contents from spoiling or drying out.

Another popular format is the plastic flip-top cap that offers the end-user the convenience of being opened and closed with one hand.

Specialist products may require a particular neck finish and closure, such as ribbed sides for easier grip. Tubes can also incorporate a brush or sponge applicator. A pharmaceutical tube for a treatment cream could benefit from a tamper evident closure or a nozzle for contactless application. A tamper-evident membrane provides additional product protection, keeping aromas sealed in.





### **Incorporation of Recycled Material**

To help meet a brand's [sustainability goals](#), you may wish to include recycled content in the tubes. Typically, the complete tube, including the cap, can contain anything from 50% upwards of recycled plastic. Whatever the final composition, it is vital that the performance of the finished tube is not compromised in any way and that it remains fit for purpose in terms of its protection, branding, and ease of use.

### **Supplier**

Critical to all the above considerations is to find a reliable tube manufacturer who can work with you, provide the knowledge and expertise to advise on the most appropriate choice of tube packaging, and ensure a fast response and consistent supply. For new product development work and start-up businesses, the ability to offer low minimum order quantities and the appropriate industry certifications and expertise will be further important advantages.

## **Conclusion**

From established companies to start-up businesses, for a brand refresh or the launch of new product, and for both mass markets and niche sectors, flexible plastic tubes provide a wealth of opportunities.

Combining cost-effectiveness, convenience, and effective product protection and promotion, a flexible tube offers a proven [packaging solution](#) that can be tailored to specific application and branding requirements.

Find out more about Berry's range of standard flexible plastic tubes or get in touch to discuss your particular tube packaging needs.